exactly coincide with any genus of the Cryptodrilidæ. It comes nearest to *Dichogaster*[1]. This genus was created by Mr. Beddard to include a Fijian worm. Dr. Michaelsen afterwards placed in the same genus some worms that differed in several points and necessitated the definition being altered. Mr. Beddard says[2]:—"It may be noted also that there is nothing in Michaelsen's description which is opposed to uniting with his two species of *Dichogaster* my species of *Microdrilus*." The definition to include these runs:—

"Setæ paired. Dorsal pores present. Clitellum xiii.–xx. (xxiii.). Male pores on xvii. Two gizzards; three pairs of calciferous glands. Nephridia diffuse. Spermiducal glands tubular."

If it were justifiable to alter the definition so as to fit Dr. Michaelsen's worms, surely it might be stretched a little more, viz., in the variable extent of the clitellum, so as to include the present species, which comes nearest to Dr. Michaelsen's, *D. mimus*[3].

4. On a new Genus and Species of Rodents of the Family *Anomaluridæ*, from West Africa. By W. E. de Winton, F.Z.S.

[Received May 11, 1898.]

(Plates XXXIV. & XXXV.)

The British Museum has lately received a collection of mammals from the Benito River in the north of French Congo. Among these is a specimen of a Rodent which is quite new to science. It belongs undoubtedly to the curious family *Anomaluridæ*, but, unlike either of the hitherto described genera which can in any way be compared to it, it has no flying-membranes. Mr. G. L. Bates has, therefore, materially added to our knowledge of this group, having already obtained the first examples of *Idiurus macrotis* lately described by Mr. Miller from specimens in the Washington Museum, and examples of *Anomalurus batesi* previously described by the present author.

I have to thank Sir William Flower, Director of the British Museum, for allowing me to work out the mammals obtained by Mr. Bates, and I feel particularly grateful to Mr. Oldfield Thomas for so willingly foregoing his right of describing this fine new form.

Aëthurus, gen. nov.

Externally resembling *Anomalurus*, but without expanded flying-membranes; with tufts of modified hairs on the ankles. The facial portion of the skull and the proportions of the teeth much resem-

[1] Beddard, Q. J. M. S. vol. xxix. 1889, p. 251.
[2] Beddard, Mon. Olig., Oxford, 1895, p. 477.
[3] Michaelsen, Arch. f. Nat. 1891, p. 202.

bling *Idiurus*, but differing from both the above-named genera in not having any supraorbital processes of the frontal bones.

AËTHURUS GLIRINUS, sp. nov. (Plates XXXIV. & XXXV.)

The general appearance of the animal suggests a large *Graphiurus* with bushy black tail; or it may be compared to a small grey *Anomalurus without* flying-membranes. The fur is soft and dense; the entire upper surface of the body, head, and outer surface of the legs, and the base of the tail ash-grey; the lower surface and inner side of the legs lighter, or more silvery; the whole of the fur is plumbeous slate-coloured except the extreme tips, which are silvery. The colour is more pure dark grey than in any *Graphiurus*, there being almost an entire absence of drab in the colouring, and the fur agrees with *Anomalurus* and not with *Graphiurus*. The whiskers are strong and abundant, deep shining black, the longer hairs reaching to the shoulders; there are about five similar though shorter hairs standing out from the eyebrows. The tail, for a distance of about 30 millimetres from the base, is clothed above and below with soft fur like the body; on the lower side, beyond this, there is a pad of large scales exactly similar to those found in *Anomalurus*, about 35 millimetres in extent, composed of 13 scales. On the upper side of the tail, for nearly the same distance as that occupied by these large scales, only a few scattered hairs appear, barely hiding the rather coarse ordinary scales, but as the hair thickens the scaling becomes finer, and before the spot above the end of the lower scale-pad is reached the tail is covered with long black hair; from this point the tail is bushy, distichous, and squirrel-like, all the hairs shining black, and attaining the length of 45 millimetres or more towards the extremity.

In the present specimen the tail has been split and sewn up. There is a bare patch about the middle on one surface, probably caused by some former injury necessitating the splitting of the tail in the removal of the vertebræ, so that it may be only individual.

The ears are naked and dull black in the dry skin. Both the fore and hind feet are sparingly clothed with shining adpressed hairs; there are no coarse curved hairs at the base of the claws as in *Anomalurus*. On the outer side and in front of the ankles there are glandular swellings furnished with short, stiff, fusiform hairs (Plate XXXV. figs. 10–12) about 5 millimetres in length, curving downwards at the points, forming peculiar black frills or anklets. The palms, soles, and claws are pale in colour, the last-named not nearly so powerful as those of *Anomalurus*, especially those of the fore feet. The fore feet (Plate XXXV. fig. 8) are very slender, the fingers very long, and in their proportions one to another are unlike those of either of the allied genera; the thumb is entirely wanting, the 2nd and 5th fingers are subequal, shorter than the 3rd, the 4th being the longest. The hind feet (Plate XXXV. fig. 9) are more like those of *Anomalurus*; the hallux is, however, shorter, the end of the claw only reaching to the joint of the first and second phalanges of the second toe.

The general form of the skull (Plate XXXV. figs. 1–4) more nearly resembles that of *Idiurus* than *Anomalurus*, and in the proportion and form of both incisors and molars (Plate XXXV. figs. 6, 7) there is still nearer resemblance to the former. It is impossible at present to compare the skull directly with that of *Idiurus*, as the Museum does not contain a specimen of that genus; comparison will therefore be based upon the figures of *Idiurus macrotis* given by Mr. G. S. Miller, Proc. Biol. Soc. Washington, xii. p. 75, for March 1898.

The most striking differences are found in the palate, the zygomata, and the supraorbital region of the frontal bones; in these particulars the skull is also wholly unlike that of *Anomalurus*.

Taking these differences in the above order, in the animal under notice, in front of the molars the palatal aspect of the maxillæ is of uniform width, absolutely horizontal, with abrupt lateral edges; these straight lines are not found in the skull of any other rodent. The anterior (lower) root of the zygomatic process of the maxilla is set diagonally across the corner of that bone, springing abruptly from immediately behind the suture with the premaxilla, and is thus placed nearer to the incisors than to the molars (a character in which it appears to agree with *Idiurus*, and in a less degree resembling the form found in *Pedetes*); the process is narrow, solid, and rod-like, ascending and diverging to meet the malar, with which bone it forms an obtuse angle, and sending out only a very short spur-like process upon which the malar rests; it continues then only to form half, or the inner margin, of the frame of the anteorbital foramen; the malar sending out a long ascending process, *which joins the lachrymal*, forms the posterior portion of the upper root of the zygomatic arch, or the anterior wall of the orbital cavity.

The malar is of unusual depth; the lower edge is quite straight, forming an angle posteriorly. The squamosal process is unusually developed, extending about halfway along the upper side of the arch, and so *forming the postorbital ascending angle*, a character with which I can find no parallel.

The frontal bones are very unlike those of *Idiurus* or *Anomalurus* in the total absence of any projecting ridges or postorbital processes, agreeing in this respect with the *Myoxidæ*.

The auditory bullæ are very small. The back of the palate and the pterygoids throughout are very like those of *Anomalurus*; the ectopterygoids are absent or rudimentary as in the two allied genera. The palate is narrow and peculiarly uniform in width along its whole length; from the palatal to the incisive foramina there are two grooves forming a median rounded ridge along the centre of the palate. The external view of the incisive foramen (there is but one) is little more than a narrow slit; possibly the true formation is a still further development of the sinus or pit found in *Pedetes*, in which the foramina are placed; in any case this formation would probably only be the result of the deepening of the facial portion of the skull, to give strength in gnawing.

The molars in the present specimen are much worn, but there is no doubt they are of a very simple form, having a single enamel fold on the outer side only, dividing the tooth into two shallow oval cups, and thus would not differ greatly in pattern from the teeth of *Pedetes* except in the fact of their being brachydont instead of hypsodont.

The incisors are very large, being little inferior in antero-posterior depth to those of the large squirrels of the *Stangeri* group. The molar series are in parallel rows, the teeth very small and simple, as already stated; the first and last teeth of the series are about equal in size and little more than half the size of the two middle teeth, which are also about equal one to another in size. The teeth in the lower jaw, both the incisors and molars, bear the same relative proportions one to another.

The formation of the mandible (Plate XXXV. fig. 5) resembles that of *Idiurus*, as described by Mr. Miller, in the formation of a thickened bridge between the coronoid and condylar processes, with a thin, oval, almost transparent plate of bone beneath it. From the figure given of the mandible of *Idiurus macrotis* it is impossible to follow the form of the incisors, but in our new genus these teeth originate immediately beneath, or in the base of, the coronoid process, being therefore widely different from *Anomalurus*, in which genus these teeth germinate externally on a level with the last molar.

Type in British Museum. No. 98.5.4.6.

♂. Benito River (15 miles from mouth), 22nd Feb., 1898.

Measurements taken in the flesh:—Head and body 203 millim.; tail 167; hind foot 40; ear 22.

Fang name, ōsiñ. "Caught in the hands, in a hollow tree" (*G. L. Bates*, collector).

Measurements of Skull:—Greatest length 46 millim.; basal length 39; zygomatic breadth 25·5; length of frontals 17; intertemporal constriction 7·5; length of nasals 13; greatest breadth of nasals 5; tip of nasals to gnathion 13·5; height of infraorbital foramen 10·5, breadth 5·7; diastema 11·5; antero-posterior depth of incisors 4; length of upper tooth-row 6; breadth between $\frac{ms\,1}{}$ 2; breadth of palate in front of molar series 3; length of auditory bulla 7·2; mandible, greatest length (bone only) 29, greatest depth 18; tips of incisors to condyle 34·5; back of incisors to coronoid 22, to condyle 29, to angle 22·3; length of lower tooth-row 6.

The great power and depth of the facial portion of the skull, the relative size of the teeth and form of the zygomatic processes of the maxillæ, the shape of the infraorbital foramina, the narrowness of the palate, and strength of the lower jaw are characters in which *Aëthurus* resembles *Idiurus*; and the peculiar and highly specialized form of the tail, in which it resembles *Anomalurus*, places its affinity with that genus beyond doubt. On the one hand, therefore, we have cranial, on the other external characters of resemblance.

Unlike either of these genera, *Aëthurus* possesses no flying-membranes, and the skull differs markedly in the frontal region.

The character of the tail seems to outweigh the peculiarities of the skull, which are mostly adaptive, though the form of the zygomatic process of the maxilla cannot be ignored.

Until younger specimens with less worn teeth are examined it would be difficult to say with which genus there is nearest relationship, or how the three genera stand in relation one to another.

Notes on the habits of this animal are looked forward to with great interest. The form of the jaws and teeth points to a diet similar to that of *Idiurus*, whatever that may be, presumably some extremely hard non-fibrous substance. The want of flying-membranes points to diurnal habits if the analogy of the squirrels may be taken as a guide, in which family all those with wings are nocturnal and those without wings diurnal. The single specimen being a male, it is impossible to say whether the curious hairs on the ankles are a sexual character or not; the true form of these hairs will be seen on reference to Plate XXXV. figs. 10–12.

[NOTE.—Since this paper was read, I find that Dr. Matschie had already described an animal, under the name of *Zenkerella insignis*, in a paper read before the Gesellschaft naturforschender Freunde zu Berlin (see Sitz. Ges. nat. Fr. Berl. 1898, No. 4), published the same day on which my paper was read. As these two forms seem to be identical, the proper name for this animal will be that proposed by Dr. Matschie; but since the name *Aëthurus glirinus* had already been published both in the Abstract of the 'Proceedings' and in 'Nature,' it has been thought advisable to leave the present paper as originally read to the Society.

Dr. Matschie mentions the bad state of preservation of the feet of his specimen, and this, I think, will account for the discrepancies in the two descriptions of the fore feet.]

EXPLANATION OF THE PLATES.

PLATE XXXIV.

Aëthurus glirinus, half nat. size.

PLATE XXXV.

Fig. 1. Skull and mandible detached, side view, p. 452.
2. Skull, front view, nat. size, p. 452.
3. „ from above, nat. size.
4. „ palatal view, nat. size.
5. Mandible, from above, nat. size, p. 453.
6. Right upper molar series, enlarged, p. 452.
7. Right lower molar series, enlarged, p. 452.
8. Fore foot, nat. size, p. 451.
9. Hind foot, nat. size, p. 451.
10. A hair of anklet, side view, enlarged, p. 451.
11. „ „ from above, enlarged.
12. „ „ cross section, enlarged.